a gauge neck having a lower portion having threads, an upper portion having threads, and an interior wall having a gauge cap having threads wherein the lower portion of the gauge neck is threadedly connected to said one of said plurality of bosses, the gauge cap is threadedly connected to said upper portion of the gauge neck.

31. The pressure vessel of claim 30, wherein said interior wall of said gauge neck has two cradles and a plurality of tabs; a float arm having cross-bars; and said cross-bars of said float arm are engaged with said cradles and said plurality of tabs secure the cross-bars with the cradles.

a8 End

32. The pressure vessel of claim 30 wherein the tank shell is comprised of high-density polyethylene.

33. The pressure vessel of claim 32 wherein the fuel withdrawal assembly is substantially comprised of 20% glass-filled polypropylene.

34. The pressure vessel of claim 33 wherein the threads of said plurality of bosses are buttress-style threads.

REMARKS

This Amendment is responsive to the Office Action of October 24, 2002. The claim of priority has been amended to properly reflect the date which U.S. provisional patent application number 60/175,364 was filed. Claims 9-12 are indicated as containing allowable subject matter, if rewritten in independent form including the limitations of the base claim and any intervening claims, which is acknowledged and appreciated. Claims 30-34 have been added, representing Claims 9-12 in independent form including the limitation of the base claim and any intervening claims. Claim 6 has been amended. Claim 1 has been amended to more clearly define the invention. Claim 2 has been withdrawn without prejudice. Claim 8 has been amended. Claim 9 has been amended and Claim 29 has been added to further define the invention. Claims 19 and

20 have been amended to properly dependent from amended Claim 1. Reconsiderations of the objections to this application, the objections to Claims 9-12, and the rejections of Claims 1-8 and 19-20 as amended are respectfully requested.

Specification Objections

The Examiner has objected to the grammar within the specification on Page 10, Line 11. The specification has been amended to remove the article "to". The Examiner further objected to the spelling within the specification on Page 11, line 2. The specification has been amended to change the word "rotably" to "rotatably."

Claim Objection

The Examiner objected to the spelling of "rotably" within Claim 6. Claim 6 has been amended appropriately.

The §102 Rejections

Reconsideration of the rejection of Claims 1, 2, 4, 8, and 20 as being anticipated under 35 U.S.C. §102(b) over U.S. Patent 6,193,924 to Huse ("Huse") is respectfully requested.

The Huse reference issued on February 27, 2001. Serial application number 09/758,026, the application at issue, was filed on January 10, 2001 and claims the benefit of U.S. provisional patent application number 60/175,364 filed on January 10, 2000. 35 U.S.C. §102(b) states that:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this

country, more than one year prior to the date of application for patent in the United States.

The Huse reference issued on February 27, 2001, over a month after the application at issue was filed and over a year after the application's priority date. Therefore, Huse is not an anticipating reference under 35 U.S.C. §102(b).

Furthermore, even assuming Huse were applicable prior art, Huse does not disclose a pressure vessel as defined in amended Claim 1. Huse discloses a storage tank assembly (20) having a fixture (28) whose base (50) is embedded in the plastic container body (22) by a series of deformed ridges (87, 89, 91, 93, 95, 97) extending from the base (50) and embedded into the container body (22). Huse further discloses a fuel line (70) mechanically fastened to said fixture (28). Amended Claim 1 recites a pressure vessel comprising a seamless tank shell with a fuel withdrawal assembly mechanically fastened to the seamless tank shell. Huse discloses a fuel withdrawal assembly mechanically fastened to a fixture which is embedded into a tank shell.

Huse also does not disclose the type of mechanical fastening described in Claim 1 as amended. Claim 1 as amended recites a fuel withdrawal assembly that is mechanically fastened directly to a tank shell. Threading a tank shell so that the tank's functional components can be mechanically fastened directly to the shell saves both the costs associated with bonding the component to the shell and the costs associated with having to manufacture and bond additional and non-essential parts to the tank shell. Huse, in an opposite manner, discloses a fuel withdrawal assembly fastened to a fixture wherein the fixture is embedded into the tank shell which requires the additional costs of having to manufacture and bond the fixture itself to the tank shell.

Reconsideration of amended Claim 1 is requested.

Claims 4, 8 and 20 depend directly or indirectly from amended Claim 1 which is believed allowable for the reasons set forth above. Additionally, Claims 4 and 8 recite additional features which are believed to patentably distinguish over the prior art.

Specifically, Huse does not disclose a pressure vessel as defined in Claim 4. Section 6 of the Office Action notes that "Huse does not disclose where the fuel withdrawal assembly is engaged with one of the plurality of bosses by one and one-half revolutions of sealing force." Amended Claim 3 recites a pressure valve with a fuel withdrawal assembly engaged with one of a plurality of bosses by one and one-half revolutions of sealing force. Claim 4 depends directly from amended Claim 3, and therefore includes the limitation of a pressure valve with a fuel withdrawal assembly engaged with one of a plurality of bosses by one and one-half revolutions of sealing force. Therefore, Huse is not an anticipating reference and reconsideration of Claim 4 is requested.

Similarly, Huse does not disclose a pressure vessel as defined in amended Claim 8. Section 6 of the Office Action notes that "Huse does not disclose where the withdrawal assembly extends less than 1.5 inches above the outer surface of the tank shell." Claim 5 recites a fuel withdrawal assembly which extends less than 1.5 inches above the outer surface of the tank shell. Additionally, amended Claim 6 recites a rotatable fuel withdrawal assembly comprised of a split nut housing. Huse does not disclose a split-nut assembly. Finally, Section 7 of the Office Action notes that "Huse does not disclose where one of the bosses to which the fuel withdrawal assembly is comprised of a lower flange with a lower surface that engages to the capped end to from a seal." Claim 7 recites a pressure vessel where one of a plurality of bosses to which the

fuel withdrawal assembly is connected is comprised of a substantially capped end, the fuel withdrawal assembly is comprised of a lower flange having a lower surface, and the lower surface engages the capped end to form a seal. Amended Claim 8 depends directly or indirectly from amended Claims 3, 5, 6 and 7, and therefore includes the limitations of these claims. As such, Huse does not anticipate amended Claim 8.

Reconsideration of Claims 4, 8, and 20 is requested.

The §103 Rejections

Reconsideration of the rejection of Claims 3, 5, and 6 under 35 U.S.C. §103(a) as being unpatentable over Huse is respectfully requested.

Regarding amended Claim 3, the Examiner suggests in section 6 that "it is considered a design choice and clearly within the purview of the skilled artisan to vary the threads on the bosses to change the revolutions of sealing force." Amended Claim 3 recites a pressure vessel with a fuel withdrawal assembly system engaged with one of a plurality of bosses by one and one-half revolutions of sealing force. Applicant respectfully submits that Applicant's recited invention of one and one-half revolutions of sealing force is not a simple design choice. After review and testing, Applicant has determined that the application of one and one-half revolutions of sealing force to the threaded boss of the claimed invention is believed to most effectively comply with the necessary creepage requirements for marine fuel tanks. (See, American Boat and Yacht Council H25 test for creepage and the CSA International Standard B306-M1987 for creepage.) The application of the necessary sealing force (which is provided by more or less revolutions depending on variance in thread characteristics) is believed to be made more

advantageously (more technically and economically feasible) in the present invention by the recited limitation.

Regarding Claim 5, the Examiner indicates that "it is considered a design choice and within the purview of the skilled artisan to have a boss engaged within the interior space of the tank shell." However, Huse teaches away from having a boss engaged within the interior space of a tank shell as Huse discloses bosses which are engaged exterior to the tank shell. Conversely, Claim 5 recites a boss, engaged with fuel withdrawal assembly, where the boss is substantially engaged with the interior of the tank shell and the fuel withdrawal assembly extends less than 1.5 inches above the outer surface of the shell.

Finally, regarding amended Claim 6, the Examiner indicates that the use of a split-nut assembly is merely a design choice. However, none of the cited references discloses a split-nut housing in a fuel tank with bosses which are a part of the tank shell and embedded therein. Reconsideration of Claims 3, 5, and 6 is requested.

Reconsideration of the rejection of Claims 7 and 19 under 35 U.S.C. §103(a) over Huse in view of U.S. Patent 5,415,316 to Pemberton ("Pemberton") is respectfully requested.

The Office Action states that "Pemberton et al. discloses a 'Fuel tank with a recessed fill cap' [sic] that is comprised of a lower flange with a lower surface that engages the capped end to form a seal (Figure 2)." However, Pemberton suggests the use of seal members (46) and (48) to complete the seal, preferably conventional fuel resistant O-rings. Conversely, Claim 7 and amended Claim 19 depend from an allowable independent claim and additionally recite a pressure vessel with a fuel withdrawal assembly with a lower surface of a lower flange used to engage the capped ended of a boss to form a seal. Moreover, in the event that it would have been obvious from Pemberton to make such a modification, would not have Huse made such a

change? The combination is believed an impermissible hindsight reconstruction. Reconsideration of Claims 7 and 19 is requested.

CONCLUSION

For the reasons set forth above, Claims 1-12, 19-20, and 29-34 patentably and unobviously distinguish over the references of record and are in condition for allowance. Notice to that effect is respectfully requested. In the event additional fees or extensions are required, the Examiner is authorized to treat this letter as a request for further extensions and to charge deposit account 03-0172.

Respectfully Submitted,

Date: 3/21/03

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Marked Priority Claim

This application claims the benefit of U.S. provisional patent application number 60/175,364 filed on January 10, [2001] 2000, the entirety of which is hereby incorporated by reference.

Marked Specification

Another advantage of the inventive fuel tank disclosed herein is that tanks with components mechanically fastened directly to their shells are less costly to produce than are the prior art fuel tanks. The mechanical fastening removes the need to chemically bond or weld the component to the tank shell. Therefore, the cost of the materials, labor and operation associated with bonding or adhering the component is eliminated. Moreover, the common practice in prior art tank manufacture is to bond an intermediary component between the tank shell and the functional tank component (such as the fuel withdrawal or direct-sight fuel gauge), meaning additional material, assembly and machining costs. In other words, the tank would be comprised of the tank shell, a part designed solely for the purpose of connecting the functional components to the tank shell, and the functional components themselves. Therefore, threading the tank shell [to] so that the tank's functional components could be mechanically fastened directly to the shell not only saves the costs associated with bonding the component to the shell, but it also saves the costs associated with having to manufacture and bond additional and non-essential parts to the tank shell.

The present invention may further comprise a marine fuel tank with a fuel withdrawal assembly or system that is capable of 360 degree rotation, allowing for the withdrawal outlet to

be oriented linearly with the engine. Figures 1 and 3 illustrate a fuel withdrawal assembly **6** mechanically fastened to a tank shell **4**. The rotation of a fuel withdrawal assembly located within a sealed system that is mechanically locked to the tank shell is made possible by the split-nut design of the fuel withdrawal system. Figure 12 shows the combination withdrawal piece/split-nut assembly **23** that is screwed into the tank shell. Figure 9 shows generally the withdrawal outlet piece **20**. Figures 4-7 generally show the component halves of the split-nut. Figure 8 shows the split-nut housing assembly **22** as it looks when its component halves are joined, forming a substantially continuous threaded portion with a head. Figure 10 illustrates how the withdrawal outlet piece **20** is [rotably] rotatably engaged within the interior of the split nut housing assembly **22**.

Marked Claims

Please cancel claim 2 without prejudice or disclaimer.

1. A pressure vessel comprising:

a seamless tank shell defining an interior space and having an outer surface [with a fuel withdrawal assembly or a direct-sight fuel gauge mechanically fastened thereto.] wherein said tank shell is comprised of more than one bosses, each of said bosses having a threaded portion; said outer surface having a fuel withdrawal assembly or a direct-sight fuel gauge mechanically fastened thereto; and said fuel withdrawal assembly includes a threaded portion engaged with said threaded portion of one of said plurality of bosses.

3. The pressure vessel of claim [2] 1 wherein said fuel withdrawal assembly is engaged with said one of said plurality of bosses by one and one-half revolutions of sealing force.

6. The pressure vessel of claim 5, wherein the fuel withdrawal assembly comprises a split-nut housing including two mated halves, said mated halves defining an interior space and forming a continuous threaded portion, and, said withdrawal outlet piece [rotably] rotatably engaged within said interior space defined by said mated halves.

8. The pressure vessel of claim 7, wherein the pressure vessel comprises a direct-sight fuel [guage] gauge having a threaded portion engaged with said threaded portion of one of said plurality of bosses.

9. The pressure vessel of claim 8, wherein the direct-sight fuel gauge comprises:

a gauge neck having a lower portion having threads, an upper portion having threads, and an interior wall having [two cradles and a plurality of tabs;

a gauge cap having threads;

a float arm having cross-bars; and

wherein the lower portion of the gauge neck is threadedly connected to said one of said plurality of bosses, the gauge cap is threadedly connected to said upper portion of the gauge neck, the cross-bars of the float arm are engaged with the cradles and said plurality of tabs secure the cross-bars engaged with the cradles.] a gauge cap having threads wherein the lower portion of the gauge neck is threadedly connected to said one of said plurality of bosses, the gauge cap is threadedly connected to said upper portion of the gauge neck.

19. The pressure vessel of claim [2] 1, wherein said one of said plurality of bosses to which the fuel withdrawal assembly is engaged is comprised of a substantially capped end, the fuel withdrawal assembly is comprised of a lower flange having a lower surface, and the lower surface engages the capped end to form a seal.

20. The pressure vessel of claim [2] 1 wherein said tank shell is comprised of high-density polyethylene.

Please add the following new claims 29-34.

29. The pressure vessel of claim 9, wherein said interior wall of said gauge neck has two cradles and a plurality of tabs; a float arm having cross-bars; and said cross-bars of said float arm are engaged with said cradles and said plurality of tabs secure the cross-bars with the cradles.

30. A pressure vessel comprising:

a seamless tank shell defining an interior space and having an outer surface wherein said tank shell is comprised of more than one bosses, each of said bosses having a threaded portion; said outer surface having a fuel withdrawal assembly or a direct-sight fuel gauge mechanically fastened thereto; and said fuel withdrawal assembly includes a threaded portion engaged with said threaded portion of one of said plurality of bosses; and

said fuel withdrawal assembly is engaged with said one of said plurality of bosses by one and one-half revolutions of sealing force; and

said fuel withdrawal assembly includes a withdrawal outlet piece capable of 360 degree rotation when engaged with said fuel withdrawal assembly; and

said one of said boss which is engaged with said fuel withdrawal assembly is substantially engaged with said interior space of said tank shell and said fuel withdrawal assembly extends less than 1.5 inches above said outer surface of said tank shell; and

the fuel withdrawal assembly comprises a split-nut housing including two mated halves, said mated halves defining an interior space and forming a continuous threaded portion, and, said withdrawal outlet piece rotatably engaged within said interior space defined by said mated halves; and

said one of said plurality of bosses to which the fuel withdrawal assembly is connected is comprised of a substantially capped end, the fuel withdrawal assembly is comprised of a lower flange having a lower surface, and the lower surface engages the capped end to form a seal; and

the pressure vessel comprises a direct-sight fuel gauge having a threaded portion engaged with said threaded portion of one of said plurality of bosses; and

the direct-sight fuel gauge comprises:

a gauge neck having a lower portion having threads, an upper portion having threads, and an interior wall having a gauge cap having threads wherein the lower portion of the gauge neck is threadedly connected to said one of said plurality of bosses, the gauge cap is threadedly connected to said upper portion of the gauge neck.

31. The pressure vessel of claim 30, wherein said interior wall of said gauge neck has two cradles and a plurality of tabs; a float arm having cross-bars; and said cross-bars of said float arm are engaged with said cradles and said plurality of tabs secure the cross-bars with the cradles.

32. The pressure vessel of claim 30 wherein the tank shell is comprised of high-density polyethylene.

33. The pressure vessel of claim 32 wherein the fuel withdrawal assembly is substantially comprised of 20% glass-filled polypropylene.

34. The pressure vessel of claim 33 wherein the threads of said plurality of bosses are buttress-style threads.